



BILLING CODE 3510-DS-P

DEPARTMENT OF COMMERCE
International Trade Administration
Application(s) for Duty-Free Entry of Scientific Instruments

Pursuant to Section 6(c) of the Educational, Scientific and Cultural Materials Importation Act of 1966 (Pub. L. 89-651, as amended by Pub. L. 106-36; 80 Stat. 897; 15 CFR part 301), we invite comments on the question of whether instruments of equivalent scientific value, for the purposes for which the instruments shown below are intended to be used, are being manufactured in the United States.

Comments must comply with 15 CFR 301.5(a)(3) and (4) of the regulations and be postmarked on or before (Insert date 20 days after publication in the FEDERAL REGISTER). Address written comments to Statutory Import Programs Staff, Room 3720, U.S. Department of Commerce, Washington, D.C. 20230. Applications may be examined between 8:30 A.M. and 5:00 P.M. at the U.S. Department of Commerce in Room 3720.

Docket Number: 14-013. Applicant: Howard Hughes Medical University, 4000 Jones Bridge Road, Chevy Chase, MD 20815. Instrument: Vitrobot Vitrification Robot for Cryopreservation. Manufacturer: FEI, Czech Republic. Intended Use: The instrument is used to produce high-quality frozen-hydrated biological specimens for observation in cryo-TEM, to determine the structure of macromolecular biological complexes. It is equipped with an environmental chamber and fully automated control of blotting and plunge-freezing conditions. The computerized control of the humidity/temperature environment specimen chamber and blotting/freezing conditions is essential to reproducibly obtaining high quality samples for TEM, free of freezing artifacts. Justification for Duty-Free Entry: There are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: June 26, 2014.

Docket Number: 14-015. Applicant: South Dakota State University, Room 214 Daktronics Engineering Hall, South Dakota State University, Brookings, SD 57007. Instrument: SUNALE R-

150 Atomic Layer Deposition Reactor. Manufacturer: Picosun, Finland. Intended Use: The instrument will be used to obtain ultrathin dielectric films with full coverage of semiconductor device surface to prevent electric leakage, and fabricate amorphous metal thin films, by depositing oxide films onto metal layer surfaces and studying the effect of the diode, in order to study film uniformity, adhesion, dielectric constant, and optical constants. Unique features of the instrument include a dual vacuum chamber, which allows different reaction chambers to be fit into the same vacuum chamber, allowing easy scale up to batch process and deposition on different substrates, source lines that are pre-heated before entering the reactor chamber, improving the deposition quality, and the option of ultra-high vacuum system by using metal seal flanges. Another unique feature is the hot-wall reaction chamber, which allows a metal-metal sealing surface and pressure control that keeps all process gases inside the reaction chamber with no condensation occurring in the vacuum chamber walls. The reaction chamber walls are at the same temperature as the substrate which prevents secondary reaction routes inside the reaction chamber that would result in the loss of self-limited growth mechanism of ALD, ensures no corrosion occurs on the vacuum chamber walls, and ensures the best particle performance and long maintenance cycles, and a maximum deposition temperature of 500 degrees Celsius. Justification for Duty-Free Entry: There are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: July 1, 2014.

Docket Number: 14-019. Applicant: New Mexico Institute of Mining and Technology, 801 Leroy Place, Socorro, NM 87801. Instrument: Tip-Tilt/Narrow-field Acquisition System (FTT/NSA). Manufacturer: University of Cambridge – Cavendish Labs, United Kingdom. Intended Use: The instrument will be used to acquire the astronomical target by sensing its location in a moderate field of view image and using the position of the target relative to a pre-determined location in the sensor field of view to provide signals used to adjust the pointing of the telescope, and thereafter to detect and eliminate rapid tip-tilt (i.e. angle of arrival) fluctuations in the incoming light beam due to atmospheric turbulence – sensing these again by measuring the position of the target relative to a pre-determined location in the sensor field and using these measurements to send high frequency control signals to the active secondary mirror of the telescope and low frequency pointing corrections to the telescope mount. The unique features of the instrument are the interferometer system which is designed to fulfill the Science Reference Mission, including a focus on model-independent imaging as opposed to astrometric or precision phase or visibility measurement, which implies the ability to relocate the telescope, in particular the provision of a close-packed array configuration with shortest inter-telescope separations of 7.8 m. Another unique feature is the ability to reach limiting magnitudes of $H=14$ for group delay fringe tracking and $V = 16$ for tip-tilt sensing to allow

observations of extragalactic targets (in particular AGN, which have red colors). Other unique features include a dual role as a tip-tilt (angle of arrival) correction system and target acquisition system, for which a 60" field of view is required, a level of opto-mechanical stability such that the change in the effective tip-tilt zero point is less than 0.015" on the sky for a 5 degree Celsius change in ambient temperature, which implies sub-micron stability of the components of the system over the course of a night, a limiting sensitivity of 16th magnitude at visual wavelengths (limiting magnitude V = 16 for target acquisition and residual tilt in fast tip-tilt mode < 0.060" at V = 16), and the ability to maintain the surface temperature of FTT/MSA components close to the light beam path within 2 degrees Celsius of ambient, which, coupled with the wide operating temperature range, requires the camera to be housed in a special environmentally-controlled enclosure. Justification for Duty-Free Entry: There are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: July 3, 2014.

Dated: August 4, 2014.

Gregory W. Campbell,
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Enforcement and Compliance.